

AspenDocs 1.0

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Virtual Temperature

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Description

Calculate the virtual temperature T_v (K) from temperature T (C), pressure P (mb) and relative humidity rh (%).

$E_{sw}(P, T)$ ([/aspendocs/form_esw_hardy.html](#)) is the Hardy equation for saturation vapor pressure.

Used in Aspen starting with V3.4.5.

Formula

$$T_v = \frac{T + 273.15}{1 - h2omr * (1 - \eta)}$$

where:

$$h2omr = \frac{e}{P - e}$$

$$e = E_{sw} * \left(\frac{rh}{100}\right)$$

$$\eta = \frac{mh2o}{mdry}$$

$$mh2o = 18.105(g)$$

$$mdry = 28.966(g)$$

Source

Wikipedia [↗](#)

[↻](#) Edit me [↗](#)

Tags: formulas (tag_formulas.html)



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